«ServiceSoft» LTD

SATELLITE BEACON

LookOut

Pasport

Tula

1 General guidelines

The present certificate contains information about assigning LookOut satellite beacon (hereinafter beacon), technical specifications, precaution instructions, completeness of set etc.

Before operation please check for completeness of delivery in accordance with Table 2 and read this certificate.

When purchase please make sure that:

- Designation and serial number specified on LookOut satellite beacon and in Manufacturer's warranty card are the same;

- Manufacturer's warranty card is fully completed with stamps of manufacturer and seller.

The consumer should keep Manufacturer's warranty card throughout the service life of the beacon. In case of warranty repair one tear-off coupon is transferred to warranty workshop for repair. The scope of performed works shall be recorded in the Manufacturer's warranty card by the workshop people.

2 Purpose of LookOut satellite beacon

2.1 Beacon is designed to determine the location data of the movable object at any place in the world and to process operational parameters with the subsequent data transmission via the satellite communication channel. Besides in order to conserve energy the product is capable of recording and contacting at the appointed time for data transmission. Complete with the product Lookout user receives access to the Web service through which he can track its current location, and also look the route for the selected time periods and operational parameters.

The differential characteristics of this device from its analogues are the following:

- linking the device to the Web service - https:// LookOut.smtsrv.com (operation information is available in the User's manual);
- complete self-sufficiency (external power not required);
- provision of autonomous work from the internal power supply for at least a year (in case of the communication settings on default and the use of recommended batteries);
- universal climatic version;
- determination of the current location in the GPS / Glonass positioning system with an accuracy of ± 3 m;
- recording of operational parameters;
- built-in temperature sensor;

- Ingress protection rating IP-65;
- data transmission via Iridium satellite channel. SBD Protocol;
- Small dimensions.

2.2 The beacon corresponds to the type of climatic version - OM (General climatic marine version) and to the Categories of location 1 and 5 as per GOST 15150 at working ambient temperature from - 40 to +60 ° C. Atmosphere relative humidity is 100% at 25 ° C.

2.3 Device protection level IP65 is ensured by the shell in accordance with GOST 14254.IP-65;

3 Technical specifications

3.1 Main technical specifications and parameters of beacon are given in table 1.

Table 1

Parameter name	**Parameter value**
Global positioning	GPS/GLONASS
Satellite communication channel	Iridium SBD
Ingress protection rating	IP-65
Power voltage, V	18
Weight, kg, no more than	1,5
Overall dimensions (without the antenna), mm	192x129x52 mm

4 Completeness

Completeness is given in table 2.

Table 2

Name	**Q-ty**	**Remark**
1. LookOut satellite beacon	1	
2. Batteries (GP Ultra Alkaline /GP Super Alkaline), pcs.	12	
3. Antenna, pcs.	2	At customer's request
4. Set of documents, pcs.*	1	Certificate, user's ID
5. Packing, pcs.	1	

*** User's manual is available on the website: https:// LookOut.smtsrv.com**

5 Structural parameters

5.1 Overall and connecting dimensions are given on the figure 1.

5.2 Connection of the external antennas to the beacon is made with SMA sockets located on the device casing

The beacon is installed and fixed on the objects to the earlier prepared place with the help of magnets located inside the beacon or with set screws.

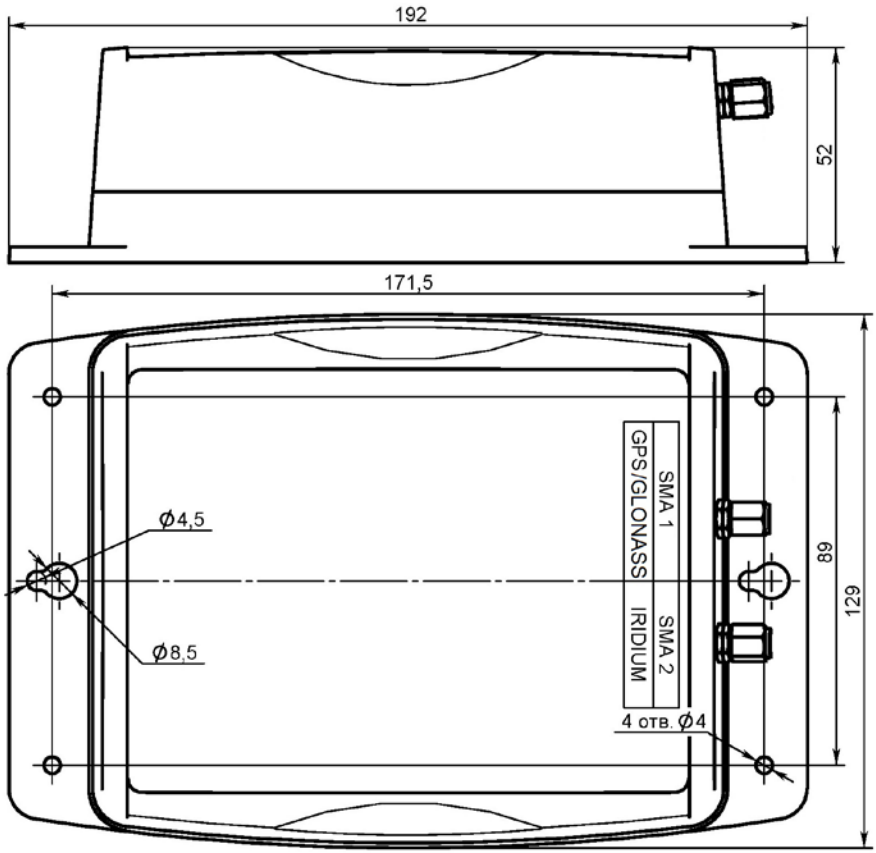

Fig.1 Overall and connecting dimensions.

Functional flow diagram of the device is shown on Fig. 2. The battery installation provides power to the device. DC / DC-converter in the device ensures the necessary voltage level for modules and microcontroller. The microcontroller using GPS / GLONASS module receives the coordinates of the place where the device is located and saves it to external

memory (keeps the data archive). Upon the expiry of time period the Iridium module is used that provides two-way satellite communications as per protocol SBD, Iridium, it is used by the beacon that transfers accumulated data to the server, after that all the data archive is available for the beacon user via WEB interface.

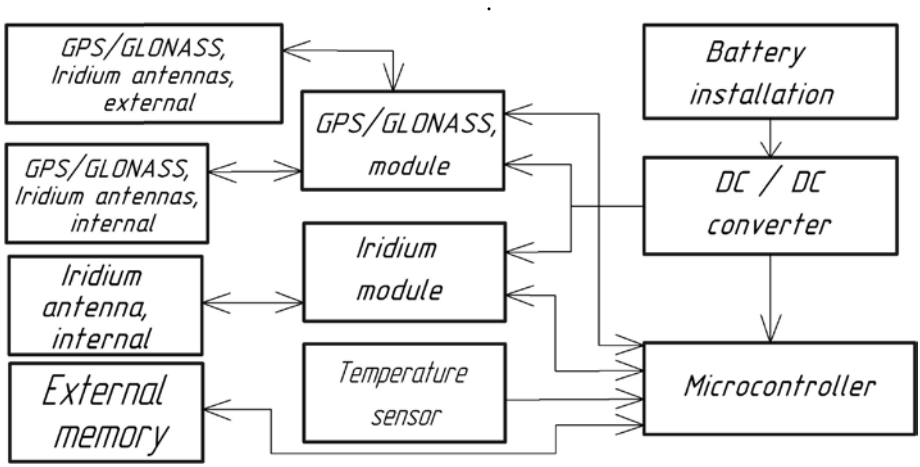

Fig.2 Functional flow diagram of the device.

6 Safety precautions, remarks on operation

6.1 Only people who have studied the given document shall be permitted to install (dismantle), operate and maintain the beacon.

Operating personnel must remember that careless or unskillful handling with the beacon, violation of manual and safety precautions can result in the beacon breakdown.

Repair of the device should be made only in certified services of the manufacturer

Operating personnel must perform the works complying the following safety requirements :

- when working with the beacon components it is necessary to ensure electrostatic protection.

- moisture, dirt and foreign objects are not allowed inside the device.

- the beacon is equipped with a strong magnet, caution must be taken when working with it, in order to avoid minor injuries . If you have the unit of electric cardiostimulator type etc. connected, the magnet must be kept at a distance from such. Magnet is capable to disrupt the devices operation (up to stoppage) that may cause health complications.

-big magnets have a strong magnetic field that adversely affects the credit cards, watches, mobile phones, TVs, computers, acoustical apparatus, speakers etc. A strong magnetic field can damage all of the abovementioned items (disable them). Keep the magnets at a considerable distance from them.

6.2 Batteries are installed immediately before launching into operation, they are included in the set with the beacon, for their installation unscrew four screws located on the bottom, support part of the product and remove the upper half of the device to access the battery holders, as shown on Fig. 3. When inserting the batteries the polarity + and - must be strictly observed, it is marked on battery holders as shown on Fig. 4, 5.

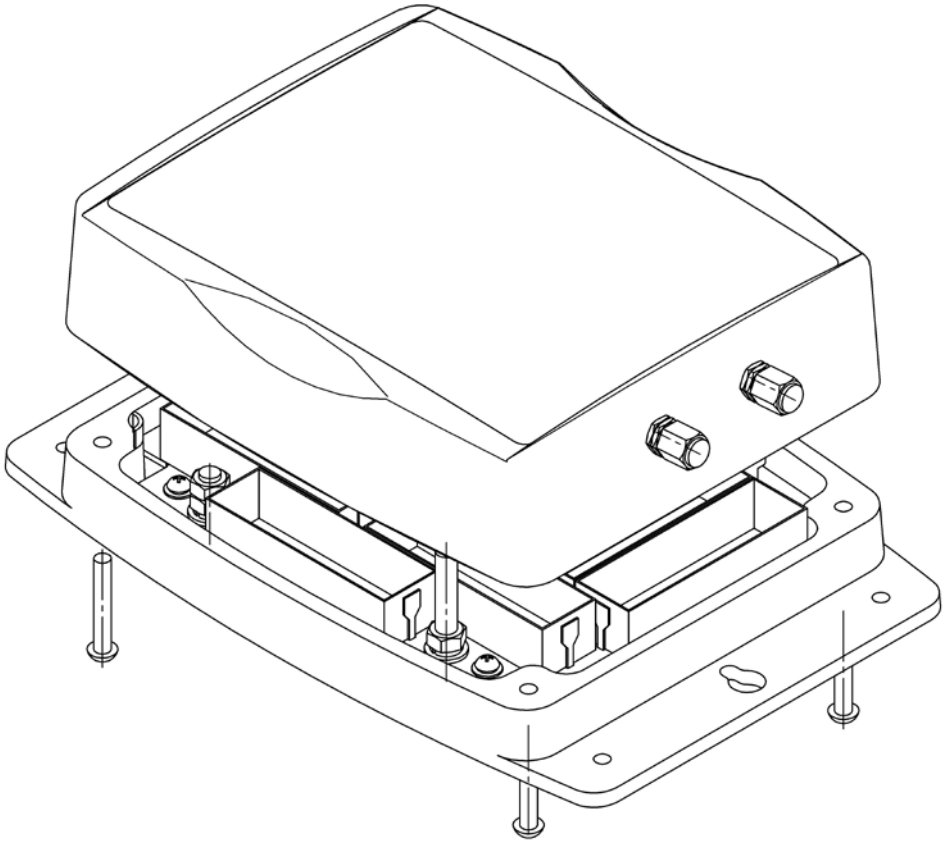

Fig. 3. Device disassembly.

Upon completion of installing the batteries connect the upper and lower halves of the beacon and tighten the screws until there is no gap between the body parts in the screws area.

Battery holder

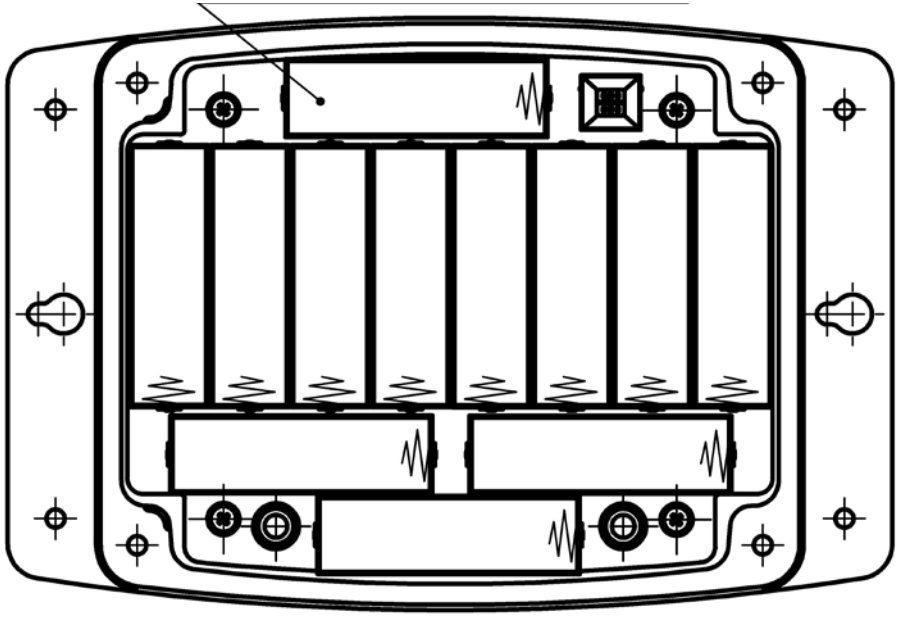

Fig. 4. Lower part of the device.

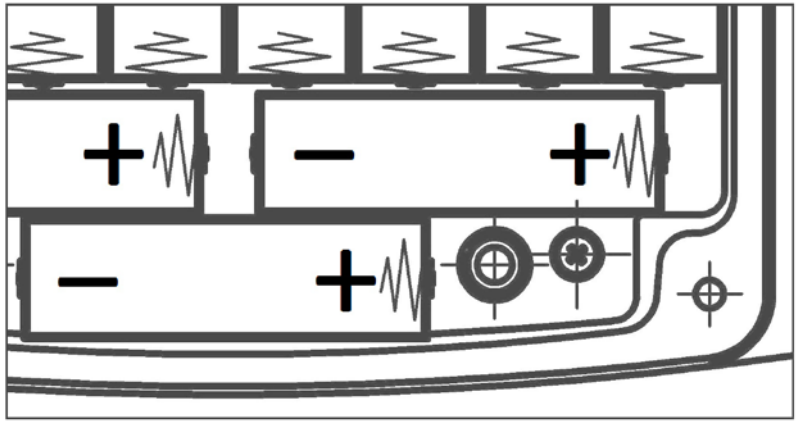

Fig. 5. The polarity of the battery holder.

Use only the recommended batteries otherwise there is no guarantee the stated service life of one battery pack.

6.3 When installing the beacon with magnets on the metal surface a sharp blow must be avoided to prevent mechanical damage of the device body. The installation is made only with the magnet side to the metal or other surface.

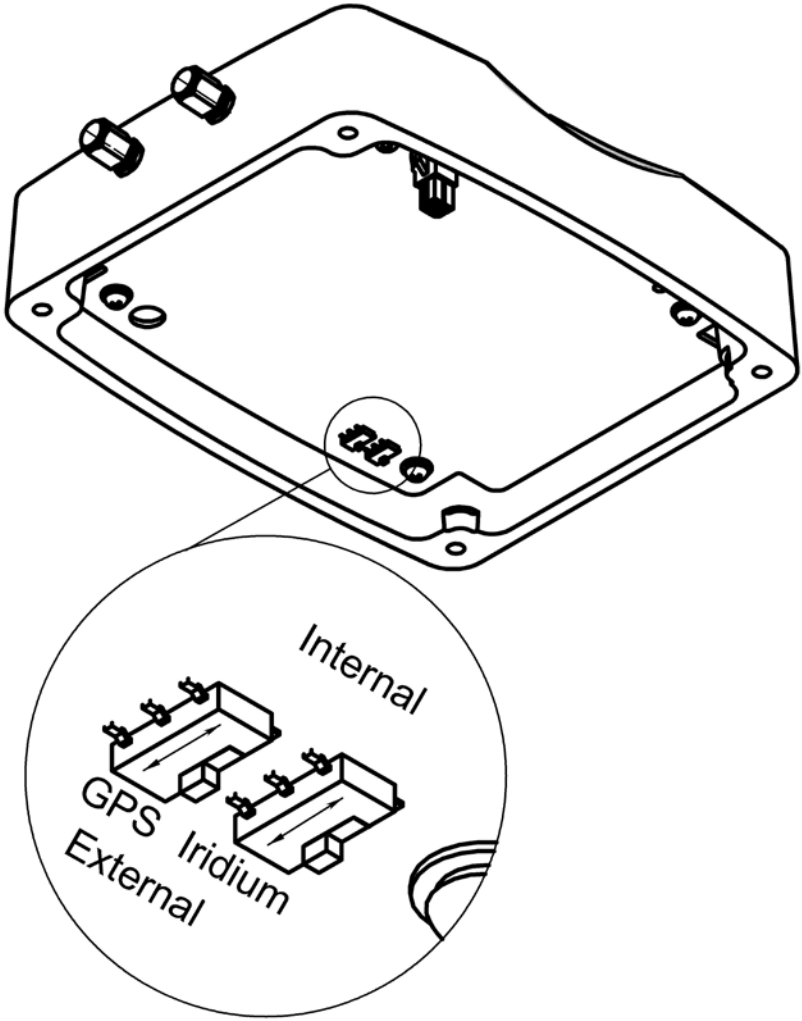

Fig. 6. Antennas management

Mounting location of the beacon should ensure a direct sky visibility. The beacon will not work properly indoors or under thick forest cover. Iridium data transmission module has a very powerful radio channel that can provide the signal trip, but for quality work it is necessary to ensure an open space above the device. The beacon stores data archive and when signal environment is improved it will transfer all the information.

Where it is impossible to install the beacon with the described method, it is necessary to use the external antennas connected to the SMA sockets located on the device body. The device switching between internal and external antennas is performed with the rocking switches located inside the device on the upper half of the beacon. The location of the Internal rocking switch corresponds to the utilization of the internal antennas of GPS and Iridium complexes, correspondingly the position of the External rocking switch to the external ones, as shown on Fig. 6

7 Storage and transportation

The beacon should be stored in the manufacturer's package, indoors, at a temperature of 5 to 40 ˚ C and a relative humidity of 80%. The beacon is transported in the manufacturer's packing by all means of transport provided the protection from the atmospheric precipitations.

8 Warranties and responsibility

8.1 The manufacturer guarantees the conformity of the beacon to the specified characteristics provided the customer comply with the installation, operating conditions, storage and transportation.

8.2 The warranty period is 12 months from the date of purchase.

8.3 The guaranteed storage life of the product in the package is six months from the date of manufacture.

8.4 In case of signs of product failing please apply to the manufacturer for competent advice and technical assistance.

8.5 The manufacturer is managing the improvement of the product that enhances its reliability and upgrades operational capabilities, so the product may have small changes that are not reflected in the documentation supplied.

8.6 Warranty service is not performed in the following cases:

- Violation of requirements stipulated in the present certificate.

* In case of damage, transfer, absence and non-legibility of the serial numbers on the equipment nameplates.

- If normal operation of equipment can be restored by due setting and alignment, restoration of initial information in the available menus;

- Natural disasters, lack of technical experience of the operating company's employees or user (including as to installation and mounting);

- If you notice on the product or inside it the signs of impact, careless handling, normal wear, outside interference (opening), mechanical, corrosion and electrical damages, self-maintained construction modification or outside appearance;

- Damages due to malfunction or structural weaknesses in the systems that are operating the equipment,

In all these cases, the company performing warranty maintenance reserves the right to demand refund incurred during the diagnosis, repair and maintenance of the equipment on the basis of current price list.

9 Utilization information

Content of toxic, flammable, explosive and other dangerous substances in the product (excluding batteries) is absent. Defective product (excluding batteries) can be recycled for re-use of non-ferrous metals. Recycling (except battery) does not require special precautions and can be carried out in conventional manner.

Batteries shall be disposed in accordance with the environmental laws and requirements of the country in which the operation of the product is performed.

10. Consideration of storage period and conditions.

After the purchase and transportation of the product, when accepting them for storage the consumer who bought a device fills in the table 3.

Table 3. Consideration of storage period and conditions

Date		Storage conditions	Type of storing	Remark (signatures of people responsible for storage)
Of acceptance for storage	Of release from storage			

11 Device transfer while in service

Device transfer while in service (including since placed in service) is filled by the consumer who operates the beacon.

Table 4. Device transfer while in service

Installation location	Release date	Hours in service		Reason for release	Signature of person who performed acceptance (release)
		Since placed in service	Since last overhaul		

12 Acceptance certificate

LookOut satellite beacon, serial № _____ manufactured and accepted as per acting technical documentation and acknowledged ready-for-service.

Date of manufacture « ____ » _____ 201___.

L.S.

Quality Manager _____/_____/

13 Packing certificate

LookOut satellite beacon

serial №_____
Date of manufacture « » _____ 201_.

L.S.

packed in accordance with requirements foreseen in the technical documentation.
Packing is made by:

_____	_____	_____
(position)	(signature)	(printed name)

_____
(date)

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